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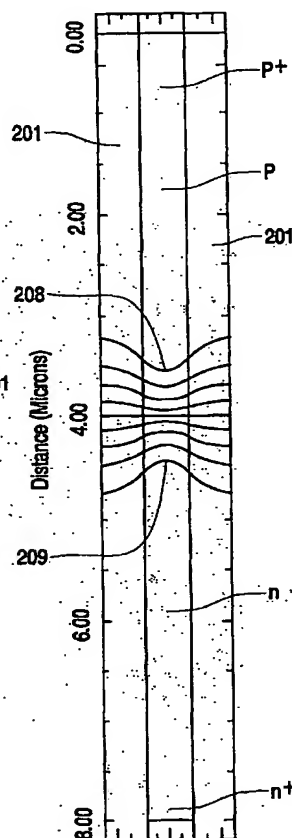
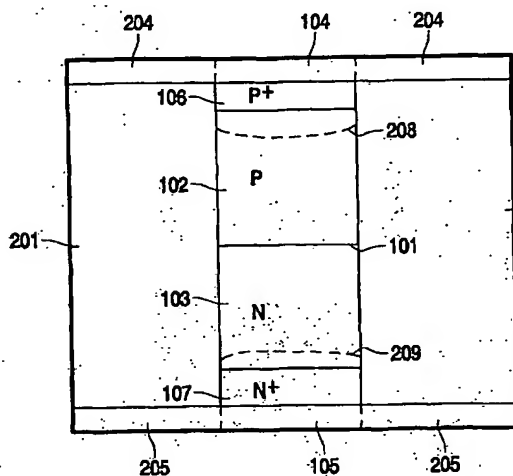
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(54) Title: SEMICONDUCTOR DEVICES WITH A FIELD SHAPING REGION



(57) Abstract: A semiconductor device, for example a diode (200), having a pn junction (101) has an insulating material field shaping region (201) adjacent, and possibly bridging, the pn junction. The field shaping region (201) preferably has a high dielectric constant and is coupled via capacitive voltage coupling regions (204,205) to substantially the same voltages as are applied to the pn junction. When a reverse voltage is applied across the pn junction (101) and the device is non-conducting, a capacitive electric field, is present in a part of the field shaping region which extends beyond a limit of the pn junction depletion region which would exist in the absence of the field shaping region (201), the electric field in the field shaping region inducing a stretched electric field limited to a correspondingly stretched pn junction depletion region (208,209) and an increased reverse breakdown voltage of the device.

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